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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,260	03/01/2001	Yasuaki Itoh	2543US0P	6283

23115 7590 10/05/2004

TAKEDA PHARMACEUTICALS NORTH AMERICA, INC
INTELLECTUAL PROPERTY DEPARTMENT
475 HALF DAY ROAD
SUITE 500
LINCOLNSHIRE, IL 60069

EXAMINER	
MITRA, RITA	

ART UNIT	PAPER NUMBER
1653	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/786,260	ITOH ET AL.	
	Examiner	Art Unit	
	Rita Mitra	1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5 and 6* is/are pending in the application.

4a) Of the above claim(s) 5 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

Applicants' amendment in response to office action dated March 25, 2004 filed on June 25, 2004 is acknowledged. Claims 1 and 5 have been amended. Claims 4 and 7-10 have been canceled. Therefore, claims 1-3, 5 and 6 are currently pending and are under examination.

Response to Remarks and arguments

Rejection under 35 USC § 101-Nonstatutory

Rejection of claims 1 and 2 under 35 USC § 101-Nonstatutory is withdrawn in view of amendment to claim 1.

Rejections under 35 USC § 112, Second Paragraph

The rejection of claims 1, 2, 3, 5, 6 under 35 USC § 112, Second Paragraph being indefinite for reciting "substantial identical" is withdrawn in view of the amendment to claim 1.

The rejection of claim 3 under 35 USC § 112, second Paragraph is withdrawn in light of the remarks at page 6 of the 'Amendment and Response.'

The rejection of claim 6 under 35 USC § 112, second Paragraph is withdrawn in view of the remarks at page 7 of the 'Amendment and Response.'

Rejections under 35 USC § 102

The rejection of claim 1 under 35 USC § 102 is withdrawn in view of the amendment to claim 1.

Restriction Election

Claim 5 as amended, requires a restriction under 35 U.S.C. 121 from the elected group of claims 1, 2, 3 and 6. The method of claim 5 does not indicate the use of the product of claim 1.

The compound used in the method 5 and the protein of claim 1 has a different chemical entity therefore are patentably distinct. Claim 5 is withdrawn from examination in this office action.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title"

Claims 1-3 and 6 stand rejected under 35 U.S.C. 101 because the specification does not provide either a specific or substantial asserted utility or a well-established utility, and thus, does not support the claimed invention. The proteins of the invention are not supported by either a specific asserted utility or a well established utility because the specification fails to assert any utility for the claimed proteins and neither the specification as filed nor any art of record disclose or suggest any activity for the claimed proteins such that another non-asserted utility would be well established. Note, because the claimed invention is not supported by a specific asserted utility for the reasons set forth above, credibility cannot be assessed. The reasons are given in previous office action dated March 25, 2004 (see entire utility rejection on pages 2-6).

In response Applicants urge (page 5 of 'Amendment and Response') that an analysis of expression sites was performed in Example 2 (page 68) and confirmation of expression in limited tissues was indicated.

It is noted in Example 2 the Northern Blotting has been done using human multi-tissue Northern blots available commercially (Clontech) using a DNA probe prepared from the base sequence obtained from TGC-440 clone in the database (see Example 1). It has been stated in Example 2, the result revealed that the mRNA of this clone is expressed in limited tissues such as human lungs, trachea and stomach, and the mRNA was found to be an organ-specific expression product. However, the Example does not indicate that the mRNA used in the Northern blot was isolated from TGC-440 clone. It appears from the description that the experiment in example 2 is actually performed. The Example is not prophetic. Therefore, in absence of a figure depicting

Northern Blot result or a complete description of the result, it cannot be concluded that the expression is tissue or organ specific. Moreover, it should be noted that the final result of the Northern Blot hybridization with a specific probe is related with the expression level of the mRNA. If the mRNA message is not abundant then the signal of hybridization may not be detected on the blot. Therefore, Applicants' arguments are not persuasive. It should also be noted that merely being a tissue specific marker is insufficient to meet utility requirements.

Additionally, Applicants comment on page 5 (Amendment and Response) that one skilled in the art can recognize therapeutics indication for a protein so expressed. Examples of diseases, which the claimed protein, as set forth in claim 1 as amended **may affect**, are described in the specification (see page 4, paragraph 24).

In response Applicants' attention is drawn to the page 2 of the specification, where it indicates, that the present inventors successfully found cDNA having a novel base sequence at high levels in the lungs, trachea, stomach etc., and found that 1) a protein encoded by said cDNA is a humoral factor actually secreted extracellularly, 2) a protein which has a signal sequence and comprises an amino acid sequence identical or substantially identical with the amino acid sequence represented by SEQ ID NO: 1, however the specification fails to provide any description of the biological activity of the protein in terms of signal transfer and self-protection as a humoral factor. The specification has not provided any sequence identity of the protein or percent similarity to the sequence of known member of humoral factor protein or to the sequence of a member that represents a class of humoral factor protein. Therefore, only on the basis of base sequence similarity it cannot be interpreted that the protein of invention would have similar activities of humoral factor protein. Since no activity of the protein has been provided in the specification, one skilled in the art would need to prepare, isolate and analyze the protein in order to determine its function and use, then only artisan can recognize the therapeutics indication for the protein so expressed.

As for the comment on having the claimed protein, as set forth in claim 1 as amended **may affect** diseases which are described in the specification (see page 4, paragraph 24) have been reviewed. In response first of all it should be noted that Applicants are not asserting on this

utility by stating "**may affect** diseases." Next it should be noted that general uses of the protein set forth in the specification, include uses in the fundamental study such as molecular weight marker, tissue marker, chromosome mapping, identification of hereditary diseases, design of primer and probe etc. (pages 4); uses for therapeutic or preventive purposes in fields such as inhibition of cancer metastasis etc.; in addition present invention is applicable for therapeutic and preventive purposes against diseases such as trachea- and bronchus related diseases etc. (page 4, 5). Examples of many diseases have been listed but the specification does not indicate explicitly the correlation of the role of any composition comprising the protein to a specific disease treatment or prevention. Also, high expression of the base sequence in lungs, trachea, stomach etc. does not indicate any link to specific disease state and cannot be concluded that the protein would be useful in treatment or prevention of cancer metastasis etc. (see page 4). These general uses are not specific and substantial, as they do not require any one particular sequence.

Therefore, as per discussion above and in previous office action, based on the specification it is unclear what activity the claimed protein possesses and therefore unclear how a person having skill in the art would be using the claimed protein. In summary, the proteins and partial peptides claimed (claims 1-3, 5, 6) do not have a credible, specific or well-established utility and therefore lacks utility under 35 U.S.C. 101.

Claim Rejections - 35 USC § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 and 6 stand/are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific or substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention. The explanation given in 101 rejection (see previous office action and also supra) is also applicable to this rejection.

Claims 1-3 and 6 stand/ are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As for the rejection of claims 1-3 and 6 for not enabling due to lack of written description in the specification Applicants' comment at page 6 that on page 66 of the specification, the information regarding deposits of relevant materials are described and they assert that deposits prove enablement of claims 1-3 and 6.

In response it should be noted that claims 1 and 2 are directed to proteins and partial peptides of the sequence of SEQ ID NO: 1. As discussed above and in previous office action, based on the specification (pages 2-12, 25-34) it is unclear what activity the claimed proteins and variants possess, and therefore unclear how a person having skill in the art would have used the claimed variants. The specification does not describe the functional properties of these variants, and the structural information is limited. Therefore, how a skilled artisan would know how to use the protein.

Claim 3, directed to a method of producing the proteins and partial peptides of the sequence of SEQ ID NO: 1. As discussed above, the generic methods of production of the proteins or the partial peptide by deriving from cells, by recombinant and by synthetic methods have been described in the specification (pages 12-33). However, when the structure and function of the partial peptides are not known, how a skilled artisan would know that the protein produced by these methods would have the same activity as to the activity of the protein and partial peptide of the present invention. The independent claim 1 as amended does not remove the deficiency, therefore the reasons for rejection given in the previous office action and also supra are applicable to this rejection.

Claim 6 is directed to a kit, for screening for a compound promoting or inhibiting the activity of the protein (claim 1) or the partial peptide (claim 2) of the invention. The kit comprises the protein or partial peptide of the invention, however the specification fails to

describe the activity of the proteins and partial peptides. If the function of the products is not known how one skilled artisan would know how to use the product.

Therefore, as per discussion above and in the previous office action, the rejection of claims 1-3 and 6 under 35 U.S.A. 112, first paragraph stands.

Claim Rejections - 35 USC § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

"The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

Claims 1, 2, 3, 6 stand/are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite for reciting, "represented by." The amino acid sequence of the claimed protein is a definite structure identified by a definite SEQ ID NO: 1. A representative is not a 100% identity of an identifier, therefore, the amino acid sequence of said protein is not represented by SEQ ID NO: 1. An amendment to the claim to read as "amino acid sequence of SEQ ID NO: 1" or "amino acid sequence set forth in SEQ ID NO: 1"may obviate this rejection. Claims 2, 3 and 6 are included in this rejection for being dependent on a rejected claim and not correcting the deficiency of the claim from which they depend.

Claim 2 stands rejected being indefinite because of using the term "partial peptide." it is unclear what that partial peptide is, what is the structure and function of these peptides? Claims 3 and 6 are included in this rejection for being dependent on a rejected claim and not correcting the deficiency of the claim from which they depend.

In response Applicants state (page 6 of 'Amendments and Response') that as the " partial peptide" is described in the specification on page 10, paragraph 68 to page 11, paragraph 75, they disagree that the phrase "partial peptide" is unclear. Applicants should note that the description on page 10-11 is generic. The description does not particularly pointing out and

distinctly defining a specific (structurally and functionally) "partial peptide" in support of the claimed subject matter 'A partial peptide' as the claim recites.

Claim 2 recites the limitation "partial peptide" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections – 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 2, 3, 6 stand/ are rejected under 35 USC 102 (a) as being anticipated by Rosen et. al. (WO 98/45712, October 15, 1998, IDS reference A1). Rosen et al. teach human secreted proteins and variants thereof, polynucleotides encoding the said proteins, uses of such proteins and their production (see Abstract, page 2, 26, 31). Rosen et al. also teach vectors, host cells, and recombinant methods for producing the protein (see page 2, 36); Rosen et al.'s invention further relates to screening methods for identifying binding partners of the polypeptides (page 42). As evidenced by Feng, Rosen et al's protein has 81.8% sequence identity to amino acid sequences of SEQ ID NO: 1, (see Feng et al., "Polypeptide encoded by gene 7 clone HJPDJ64," January 28, 1999, alignment result 32, database A_Geneseq_19Jun03, Accession NO: AAW83953), see Table 1 at page 20 of WO '712 reference. Rosen et al.'s protein fragments and variants are considered for the partial peptides (defined as peptide having at least 5 or 20 or 30 or 50 or 80 or more amino acid residues from the amino acid sequence constituting the protein of the present invention, page 10 of the specification), which has 93 amino acid residues of SEQ ID NO: 1; shows 81.8% sequence identity and 100% best sequence similarity to SEQ ID NO: 1 (claim 2); recombinant production of the proteins using bacterial vector like pQE70, and host cell E. coli (page 36) are considered for the method of claim 3; and fragments and variants are considered

for the partial peptide contained in the kit of claim 6 of instant application. Thus Rosen et al. anticipates claims 2, 3 and 6 of the instant application.

Conclusion

No claims are allowed.

Inquiries

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rita Mitra whose telephone number is (571) 272-0954. The Examiner can normally be reached from 9:30 a.m. to 6:30 p.m. on weekdays. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dr. Jon Weber, can be reached at (571) 272-0925. Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Fax Center number is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-0547.

Rita Mitra, Ph.D.
September 17, 2004

JON WEBER
SUPERVISORY PATENT EXAMINER